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Report of the Secretary-General on the protection of Somali natural resources and waters

I. Introduction

1. The present report is submitted pursuant to paragraph 7 of Security Council resolution 1976 (2011), in which the Council requested me to report on the protection of Somali natural resources and waters and on alleged illegal fishing and illegal dumping, including of toxic substances, off the coast of Somalia. The Council noted its concern that allegations of illegal fishing and dumping of toxic waste have been used by pirates to justify their criminal activities.

2. The present report reviews information currently available relating to illegal fishing and illegal dumping off the coast of Somalia and assesses the potential environmental and economic costs for the country. It also examines the status of Somalia's natural resources and the corresponding legal framework on their protection and exploitation. The report is based on existing research and on contributions by United Nations departments, funds and programmes, as well as field and expert interviews and inputs provided by Member States, regional organizations and regional fisheries management organizations. Based on this collated information, the report puts forward observations and recommendations for policy, legal and programmatic action.

II. Somali natural resources and waters

A. Overview

3. Somalia is an arid to semi-arid country where 80 per cent of livelihoods are directly dependent on the natural resources base. Livestock has traditionally been the most important sector, while agriculture has provided staple and cash crops. These livelihoods are supported further by the exploitation of the natural resource base, such as charcoal production and trees for fodder. Despite strong environmental awareness, especially by pastoralists who are the dominant land users, the country suffers from critical levels of ecological degradation that may be difficult to reverse. Some 30 per cent of the land (catchments, range areas and agricultural lands) is considered degraded.

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4. Somalia possesses important biodiversity and a large number of species exclusive to the Horn of Africa, which includes numerous varieties of flora and fauna that have adapted to the arid conditions. Owing to the current environmental situation and overexploitation, many of these species are endangered and their habitats threatened.[1] Much of the country's once abundant and significant diversity of wildlife is now endangered.

5. One of the conclusions of a global policy report released by the United Nations Environment Programme (UNEP) in 2009 stated that "... the way that natural resources and the environment are governed has a determining influence on peace and security".[2] This conclusion holds especially true for Somalia given the scarcity of natural resources and the level of resource-dependent livelihoods. Environmental issues and the poor governance of natural resources are multisectoral and impact all aspects of life. The lack of State control or governance results in widespread misuse of Somalia's natural resources, as well as restricted access and elite capture. Degradation of natural resources is compounded by the effects of climate change, increased population pressures, conflicts and rapid urbanization.

B. Livestock and agriculture

6. For centuries, pastoralism has been the dominant livelihood and source of income for Somalia's predominantly rural population; this includes both nomadic and sedentary herding of cattle, sheep, goats and camels. Some 55 per cent of households are based on pastoralism or agro-pastoralism,[3] with livestock contributing over 40 per cent of gross domestic product (GDP).[4] More than 70 per cent of the land area is dedicated to agriculture through rain-fed and irrigated farming systems, and 24 per cent of households are based on agriculture.[5]

7. The prolonged civil war has seriously impacted livestock and agriculture. This includes loss of productive assets, including livestock and irrigation equipment to militias, as well as expulsion from farms, especially in the south. Knowledge of fruit tree management and harvesting systems has largely gone with the displaced. Agricultural production has also been affected by frequent droughts in 1987, 2000, 2004, 2008 and 2010-2011. Disputes over property and land rights have increased owing to the growing scarcity of land. Land speculation and illegal enclosures in common pasturelands are also on the rise, resulting in an increase in local conflicts.[6]

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[1] Omuto, C. T. and others, "Land degradation assessment and a monitoring framework in Somalia", Technical Project Report L-14 (Nairobi, Food and Agriculture Organization of the United Nations-Somalia Water and Land Information Management, 2009).

[2] Available from http://www.unep.org/pdf/pcdmb_policy_01.pdf.

[3] United Nations and World Bank Coordination Secretariat, *Somali Joint Needs Assessment: Productive Sectors and Environmental Cluster Report* (2007). Available from http://www.somali-jna.org/downloads/vol5_V.pdf.

[4] International Union for Conservation of Nature, "Country Environmental Profile for Somalia" (2006).

[5] World Bank Country Profile. Available from http://data.worldbank.org/country/somalia (accessed July 2011).

[6] Independent Scholars Group, "Need to Address Pastoral Land Degradation and Increasing Rural Conflicts in Somaliland", *Somaliland Times*, Issue 473, February 2011. Available from http://www.somalilandtimes.net/sl/2011/473/30.shtml.

8. Poverty levels are aggravated by rising food prices, which are the result of rising fuel costs, lower agricultural production, inflation and the rise in maritime freight charges on imported goods due to piracy and armed robbery at sea.[7] More than 50 per cent of cereal requirements come from commercial imports and food relief programmes. Ongoing violence in the country also makes it challenging to get food to those most in need. Furthermore, environmental degradation is reducing the availability of water, the amount of land usable for agriculture or grazing, and biodiversity. It is also causing displacement as areas become uninhabitable, further eroding sustainable livelihoods and making piracy and armed robbery at sea attractive.

9. Exports of livestock and their products account for 80 per cent of all Somali exports in normal years. About 2 million animals are exported per year, generating about 40 per cent of GDP.[8] Despite an import ban imposed by Saudi Arabia in 2000, livestock exports continue to be the largest traded commodity for Somalia.[9] However, prior to the current drought that has decimated livestock, the numbers of livestock were reported to be exceeding the carrying capacity, resulting in overgrazing and outbreaks of livestock disease.

C. Fresh water, sanitation, and waste management

10. Northern and central Somalia suffer from acute water shortages, with the available water being mainly saline. Since 1991, the vital water points in those regions have not received appropriate maintenance by government authorities to provide the necessary water for drinking and cultivation purposes. Somaliland in the north-west faces a water crisis with "entire villages ... abandoned as adverse climate change is reducing water sources".[10] There are no rivers in the north-eastern regions, where the majority of the population depends on cattle rearing. Southern Somalia is generally greener, with two permanent rivers, the Jubba and Shebele, which are shared with Ethiopia. These rivers and the underground aquifers are widely exploited. The remaining water courses are ephemeral, yet provide important water sources (wells) and account for relatively richer vegetation in their vicinity.

11. Water rights have been a major cause of conflict between groups of pastoralists, often exacerbated by externally funded water development schemes.[11] In rural Somaliland and Puntland, the construction of unplanned private water development, mainly by wealthy livestock owners, is increasing pressure on the surrounding rangeland. This is exacerbated by the increased use of private enclosures for grass, which curtails grazing routes and is the source of most rural conflicts.[12]

12. The quantity and quality of water resources are a major development challenge for Somalia, aggravated by recurrent devastating droughts and irregular rainfalls

[7] Mahamoud, A. E., "Somalia: A Defenceless Country" in *Social Watch Report 2009*, pp. 152-153. Available from http://issuu.com/socialwatchcz/docs/sw_report_2009.

[8] International Union for Conservation of Nature, Eastern Africa Regional Office, *Country environmental profile for Somalia* (n.d.) (pre-publication draft).

[9] FAO: http://faosomalia.org/livestock.

[10] Mahamoud, A. E., "Somalia: A Defenceless Country", op. cit.

[11] Norton, G., *Land, Property and Housing in Somalia*, Oslo, Norwegian Refugee Council (2008).

[12] Independent Scholars Group, op. cit.

that vary according to location and season. Furthermore, inadequate distribution of water, along with the increasing scarcity and widespread misuse and mismanagement of water, poses a serious and growing threat to sustainable development. In 2008, only 30 per cent of Somalia's population had access to improved sources of water (only 9 per cent in rural areas), and 23 per cent had access to improved sanitation facilities (6 per cent in rural areas).[13] Furthermore, nomadic populations, their livestock and wildlife are forced to share the remaining meagre water resources. Somalia is predicted to be one of 13 African countries that will face water scarcity by 2025, partly because of human activities, such as deforestation for charcoal production, overgrazing or crowding around watering points and other inappropriate land use measures.[14]

13. The urban areas in southern-central Somalia suffer from poor solid, municipal and industrial waste management and non-functional sanitation.[15] Waste and garbage are piled around cities, creating a situation of uncontrolled and unmanaged hazardous waste. The public is exposed to these hazardous materials on a daily basis through the air, food, water and consumer products.[16] In Mogadishu, an earlier waste removal programme supported by the International Organization for Migration (IOM) could not be sustained. In cooperation with the Benadir administration, the United Nations Human Settlements Programme (UN-Habitat) has started a multi-year programme that would also establish sustainable solid waste management systems under public-private partnerships. UN-Habitat has also helped to establish such systems in the major towns of Somaliland and has commenced similar programmes in a number of towns in Puntland.

14. Waste management is a critical concern given the absence of a functional government system in southern-central Somalia to manage domestic, municipal and industrial waste disposal. Environmental laws and regulations are non-existent. Seepage from illegal dumping sites is a potential contaminant of ground and surface water resources. Likewise, pesticide storage in Somaliland's Ayaha valley poses a serious health and environmental threat. Solid waste generated domestically is also dumped onto the shore and into the sea, causing damage to coastal and marine life.

D. Forest and woodland resources

15. The charcoal trade is rapidly depleting Somalia's forests. Forestry and vegetation in Somalia are mainly coarse grass and stunted thorn and acacia trees, which constitute a critical component of pastoralist risk and drought management strategies, and are a central domestic energy source. Competing demands on these resources are arising from the growing charcoal industry that has long been a principal driver of Somalia's deforestation. Current trends reveal the limits of this economy. Forests represented about 13 per cent of Somalia's land area in 1990; in

[13] World Bank Country Profile, op. cit.

[14] World Agroforestry Centre, *An account of rainwater harvesting in Somalia* (n.d.). Available from http://worldagroforestry.org/projects/scarnet/index.php?id=53.

[15] Ibid.

[16] Kabil, A. S. O. and others, *Somalia's Situational Environmental Health Assessment of Three Zones: Somaliland, Puntland and South Central Mogadishu* (2010). Available from http://www.wardheernews.com/Articles_10/Nov/Situational%20Environmental%20health%20Assessment-Somalia.pdf.

2010 they only covered about 10.7 per cent.[17] Similarly, a recent study records an average rate of 27 per cent tree loss between 2001 and 2006 in north-eastern Somalia.[18] Old-growth acacia forests are cut down for charcoal and subsequently replaced by thorn bushes, rendering the land unusable for grazing.

16. Increasing domestic demand for charcoal coupled with an increase in charcoal exports in the 1970s resulted in alarming deforestation rates and led to a strictly enforced export ban under the Siad Barre regime. The ban remained in place until 1996, when charcoal exports soared, providing hard currency for competing faction leaders. The export ban was reimposed in 2000 and has been in effect albeit poorly enforced, under changing transitional administrations. In December 2010, the Transitional Federal Government reissued the ban. In response to government efforts, traders have stopped shipping charcoal out of Mogadishu and Marka almost entirely. However, the trade is booming in areas controlled by Al-Shabaab, mainly out of Kismaayo port. Most of the charcoal is imported by neighbouring countries.[19] It is estimated that Al-Shabaab currently generates between $70 million to $100 million per year in revenue from taxation and extortion in areas under its control, including from the export of charcoal and cross-border contraband into Kenya,[20] and between $35 million and $50 million per year from port revenues, of which at least $15 million is based on the export of charcoal.[21]

17. The charcoal industry has significant implications on livelihood security, exacerbating community conflicts and increasing vulnerability to drought. The industry is a source of tension, particularly with clans who dominate the trade at the expense of others. It is also a source of funding for militias. Most charcoal is made between Baraawe and Kismaayo, an area where conflict over the charcoal trade has turned violent.[22] It is also one of the first areas where famine was declared in 2011. This area's extreme vulnerability stems in part from poor environmental management, leading to desertification and water scarcity.

E. Marine resources

18. Stretching over 3,330 kilometres, Somalia has the longest coastline of continental Africa and is part of one of the most important large marine ecosystems in the Indian Ocean. The presence of a narrow continental shelf in this region along the western Indian Ocean coupled with an upwelling, makes this area one of the most productive in the Indian Ocean and an important breeding ground for many migratory fish species. These factors, paired with a weak legal and institutional framework and the inability of the Transitional Federal Government to enforce laws

[17] World Bank Country Profile, op. cit.

[18] Oduori, S. M., and others, "Detection of tree cutting in the rangelands of north-eastern Somalia using remote sensing", Technical Project Report L-15 (Nairobi, FAO-SWALIM, 2009).

[19] Oduori, S. M., and others, "Detection of tree cutting", op. cit.

[20] Letter dated 18 July 2011 from the Chairman of the Security Council Committee pursuant to resolutions 751 (1992) and 1907 (2009) concerning Somalia and Eritrea addressed to the President of the Security Council (S/2011/433).

[21] Ibid.

[22] Baxter, Z., "Somalia Coal Production, Deforestation and the Recent Conflict", Inventory of Conflict and Environment — American University Case Study No. 201 (2007). Available from http://www1.american.edu/ted/ice/somalia-coal.htm.

within Somali waters, makes the area attractive for illegal, unreported and unregulated fishing.

19. The marine fishery sector of Somalia is underdeveloped, though there is the potential for longer-term growth. The sector is comprised of an artisanal component, which operates in inshore areas and accounts for the largest share of the landings, roughly 60 per cent. The inshore fishery is widely reported to be overexploited in some areas. While accurate statistics are difficult to attain,[23] recent data shows total landings of approximately 18,000 tons annually.[24]

20. An industrial portion, of mostly foreign-flagged vessels, accounts for approximately 40 per cent of total fishery production of Somalia.[25] The offshore pelagic fisheries have significant potential for development. Fisheries resources within 200 nautical miles off the coast of Somalia have been conservatively estimated to be capable of providing sustainable annual catches of 200,000 tons.[26] Because of the known substantial pelagic fish resources, including tuna and mackerel species which have high unit values, the long-term development of these resources could be of vast importance to the economy and food security in the region.

F. Legal and institutional framework for environmental and natural resource management

21. There are a number of global and regional instruments that are relevant to illegal fishing and illegal dumping off the coast of Somalia, described below. While Somalia has signed various multilateral environment agreements, they are not enforced.[27] These instruments serve to affirm a country's commitment to protecting natural resources, and provide governments with a framework for domestic implementation of more stringent environmental oversight.

22. Since the overthrow of the Siad Barre regime in 1991, there has been little or no national framework for environmental and natural resource governance in Somalia due to the absence of an effective central government. Environmental affairs and the management of natural resources have been the remit of various ministries over the years. Generally speaking, policy and legislation related to the environment and natural resources is weak and outdated,[28] with some national sector policies and legislation dating back to the pre-war period. Furthermore, without adequate support from enabling institutions, laws have not been enforced.

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[23] It is important to note that all statistics dealing with Somali fisheries and related activities have very restricted utility as some limited data were gathered before the civil war of 1991, but, since that time, it is not possible to provide statistics with confidence.

[24] FAO Fishery Country Profile for Somalia (2005). Available from ftp://ftp.fao.org/FI/DOCUMENT/fcp/en/FI_CP_SO.pdf.

[25] FAO summary of fisheries and resource information for Somalia. Available from http://www.fao.org/docrep/field/303859/3038590b.htm.

[26] This information is based on several fish surveys conducted in the 1970s and 1980s.

[27] United Nations and World Bank Coordination Secretariat, Somali Joint Needs Assessment, op. cit.

[28] International Union for Conservation of Nature, "Country Environmental Profile for Somalia", op. cit.

23. The new Transitional Federal Government Ministry of Fisheries, Marine Resources and Environment agreed in 2010 to incorporate environmental dimensions into all phases of the conflict transformation process and planning strategies.[29] In July 2011, the Transitional Federal Government set up a national Disaster Management Agency in response to the drought ravaging the country.

24. The levels of competency of Somali institutions responsible for environmental affairs and natural resources differ widely depending on their history and experience. Attempts to establish new environmental policies and legislation, together with the respective institutions, have been made in the regional administrations of Somaliland and Puntland. The relevant ministries in those regional administrations have limited human resources, and there is very limited capacity to implement programmes at the regional and district level.

25. The absence or weakness of legal and institutional frameworks for environmental management in Somalia contributes to tensions around access to and ownership of natural resources and land tenure. Competition for land and other natural resources has been identified as one of the key contributing factors to violent conflict and instability.[30] There have been many conflicts over land, mainly urban but increasingly rural, over the past two decades, mainly in Somaliland but also in Puntland, and to a lesser extent in southern and central Somalia. Local-level land conflicts often contain a clan component intermingled with other political and economic interests, increasing the potential to escalate into wider intercommunity conflict.[31] The lack of governance also facilitates illegal trade, piracy and armed robbery at sea in the region. Geographical risk factors for flooding, recurrent drought (localized and regional) or locust infestation illustrate the need for the implementation of effective environmental and disaster management programmes.

G. International law of the sea

26. The 1982 United Nations Convention on the Law of the Sea sets out the legal framework within which all activities in the oceans and seas must be carried out. Many of its provisions are considered to be reflective of customary international law.[32] Somalia ratified the Convention in July 1989, and it entered into force for Somalia on 16 November 1994. As at September 2011, there were 162 parties to the Convention, including the European Union. The Convention includes provisions regarding the protection and preservation of the marine environment, the establishment of maritime zones and the rights and obligations of flag States. It also sets out the legal framework applicable to combating piracy and armed robbery at sea.

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[29] Wardheer News press release. Available from http://wardheernews.com/Press_Releases/TFG/June_01_GEF.html.

[30] Catherine Besteman and Lee Cassanelli (editors), *The Struggle for Land in Southern Somalia: The War behind the War*, Haan Publishers (n.d.).

[31] Norton, G., *Land, Property and Housing in Somalia*, op. cit.

[32] Available from http://www.un.org/depts/los/convention_agreements/texts/unclos/UNCLOS-TOC.htm.

Maritime zones

27. Pursuant to the Convention, a coastal State such as Somalia is entitled to a territorial sea not exceeding 12 nautical miles from its baselines. Within its territorial sea, the coastal State exercises sovereignty, including over its resources. In a zone contiguous to its territorial sea, which may not extend beyond 24 nautical miles from the baselines (the contiguous zone), the coastal State may exercise the control necessary to prevent infringement of its customs, fiscal, immigration or sanitary laws and regulations within its territory or territorial sea or punish infringement of these laws and regulations committed within its territory or territorial sea.

28. In addition, a coastal State may establish an exclusive economic zone not extending beyond 200 nautical miles from its baselines, where the coastal State has sovereign rights for the purposes of exploring and exploiting, conserving and managing natural resources. Within its exclusive economic zone, the State also has jurisdiction with regard to the protection and preservation of the marine environment. Foreign-flagged fishing vessels in the exclusive economic zone of a coastal State are required to comply with the conservation measures and other terms and conditions established in the laws and regulations of the coastal State. The United Nations Convention on the Law of the Sea also provides for the enforcement of laws and regulations of the coastal State in the exclusive economic zone with respect to living resources, including boarding, inspection, arrest and judicial proceedings as well as the protection and preservation of the marine environment.

29. Somalia appears not to have proclaimed an exclusive economic zone in accordance with the Convention on the Law of the Sea. Its national legislation, Law No. 37 on the Territorial Sea and Ports (1972), transmitted to the Secretary-General by a letter from the Permanent Representative of Somalia dated 20 December 1973, provides for a 200 nautical mile territorial sea. The lack of information on the harmonization of national legislation of Somalia with the Convention creates legal ambiguity.

30. Regarding navigation, pursuant to the Convention, other States enjoy the right of innocent passage through the territorial sea. Passage is innocent so long as it is not prejudicial to the peace, good order or security of the coastal State. The coastal State may take the necessary steps within its territorial sea to prevent passage that is not innocent, including when a foreign-flagged ship engages in an act of wilful and serious pollution contrary to the Convention, or any fishing activities. Coastal States may also adopt laws and regulations relating to innocent passage, and foreign-flagged ships exercising the right of innocent passage within the territorial sea are required to comply. In certain circumstances, a coastal State may exercise criminal jurisdiction on board a foreign ship within its territorial sea, including when the consequences of the crime extend to the coastal State, or if the crime disturbs the peace of the country or the good order of its territorial sea.

31. All States enjoy the freedoms of navigation and overflight on the high seas and in the exclusive economic zone, as well as other internationally lawful uses of the sea related to those freedoms, and compatible with the other provisions of the Convention. On the high seas, all States have the freedom to undertake activities, including fishing, with due regard for the interests of other States in their exercise of the same freedoms.

Flag States

32. Subject to certain exceptions, under the Convention on the Law of the Sea, all ships must sail under the flag of one State only. Flag States play an important role in addressing illegal fishing and illegal dumping at sea, as they are required to effectively exercise jurisdiction and control over vessels flying their flag, and to ensure that their vessels act in conformity with applicable rules of international law, wherever the vessels may be located. Flag States that do not appropriately exercise their jurisdiction and control thus contribute to the perpetuation of illegal activities by their vessels.

Protection and preservation of the marine environment

33. In accordance with the Convention, States are required to take all measures necessary to prevent, reduce and control pollution of the marine environment from any source, including pollution by dumping. States are also required to take all measures necessary to ensure that activities under their jurisdiction or control do not cause damage by pollution to other States and their environment, and that pollution arising from incidents or activities under their jurisdiction or control does not spread beyond the areas where they exercise sovereign rights. More specifically, the Convention provides that dumping within the territorial sea and the exclusive economic zone shall not be carried out without the express prior approval of the coastal State.

III. Allegations of illegal fishing

A. International framework to address illegal, unreported and unregulated fishing

34. Illegal, unreported and unregulated fishing[33] and related activities are a major problem globally,[34] inter alia, jeopardizing fisheries and frustrating attempts to protect the marine environment. In the context of illegal, unreported and unregulated fishing, illegal fishing has been defined to include activities conducted by national or foreign-flagged vessels in waters under the jurisdiction of a State, without the permission of that State, or in contravention of its laws and regulations. Illegal, unreported and unregulated fishing is pervasive, occurring in all regions of the world and in most fisheries. Both domestic fishing fleets and foreign-flagged vessels can be involved. Illegal, unreported and unregulated fishing poses a complex problem, varying significantly between fisheries and regions. The cumulative global impact is significant: recent estimates indicate that the annual global losses due to illegal, unreported and unregulated fishing may range from $10 billion to $23 billion,

[33] See International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing for full definitions, chap. II, paras. 3.1-3.3. Available from http://www.fao.org/docrap/003/y1224e/y1224e00.htm.

[34] Recent estimates indicate that the annual global losses due to illegal, unreported and unregulated fishing may range from $10 billion to $23 billion, although accurate quantification remains difficult due to the covert nature of the activities.

although accurate numbers are not available due to the covert nature of the activities.[35]

35. Combating illegal, unreported and unregulated fishing requires the application of different types of tools as envisaged in the 2001 Food and Agriculture Organization of the United Nations (FAO) International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing[36] and other subsequent international instruments aimed specifically at reducing illegal, unreported and unregulated fishing. The guide to the Implementation Plan[37] contains a checklist of activities that provides recommendations dealing with vessels, basic management of fisheries, and regulation of activities. This serves as a "best practice" guide for combating illegal, unreported and unregulated fishing for all States. There is no single solution to illegal, unreported and unregulated fishing situations. To address the problem, Somalia and the region would need tailored tools and approaches.

36. In 2009, the FAO Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing[38] was approved by the FAO Conference at its thirty-sixth session as a cost-effective tool to combat illegal, unreported and unregulated fishing. The legally binding agreement has currently been signed by 23 countries and the European Union. When it enters into force, in accordance with its terms, it will apply to foreign-flagged fishing vessels when they seek entry to a port or are in port. The Agreement sets minimum standards in a number of areas, such as the information required by a vessel prior to being granted entry into port, and functions of a port inspector. It is designed to allow port States to have information in advance of a vessel's entry in order to assess the likelihood that a vessel has engaged in illegal, unreported and unregulated fishing, which could lead to a denial of entry.

37. Another measure is the Global Record of Fishing Vessels, Refrigerated Transport Vessels and Supply Vessels, which is currently being developed by FAO and is designed to enhance global information sharing on fishing fleets. The global record database will provide basic identification information about vessels through the use of a unique vessel identifier as currently used by the merchant fleet. This will increase the transparency of vessel-related information, making it more difficult and more expensive for illegal operators to harvest, transport and sell illegal fish products.

B. Illegal, unreported and unregulated fishing in the context of Somalia

38. Without adequate monitoring or reporting systems, it is difficult to provide detailed information related to illegal, unreported and unregulated fishing off Somalia's coast. Several reports estimate a large number of foreign-flagged vessels engaged in unlicensed and unregulated fishing in the area. According to a recent

[35] Agnew, DJ, and others, "Estimating the Worldwide Extent of Illegal Fishing", Public Library of Science ONE (2009). Available from http://www.plsone.org/article/info:doi/10.1371/journal.pone.0004570.

[36] Available from http://www.fao.org/docrap/003/y1224e/y1224e00.htm.

[37] FAO, *Technical Guidelines for Responsible Fishing No. 9* (Rome, 2002). Available from www.fao.org/fishery/publications/technical-guidelines/en.

[38] Available from http://www.fao.org/Legal/treaties/037t-e.pdf.

study by the University of British Columbia, fish catches in Somali waters in 2002 were about 60,000 tons, of which half were taken by foreign-flagged vessels.[39] Conclusive information about the legality of those catches is unavailable.

39. The fisheries situation in Somalia is aggravated by a number of factors: inadequate national fisheries management,[40] poor governance,[41] lack of dedicated government resources and underdeveloped regional cooperation. Many of the underlying conditions that enable illegal, unreported and unregulated fishing in Somalia and elsewhere are further fuelled by lack of transparency and financial incentives that allow illegal activities to go undetected or unaddressed. These conditions must be addressed if governance is to be enhanced, outcomes improved and inroads made to prevent, deter and eliminate illegal, unreported and unregulated fishing.

40. According to a number of Somali and international observers, with the fall of the Siad Barre regime, foreign-flagged industrial fishing trawlers began encroaching on the resource-rich Somali waters. Local accounts purport that these vessels frequently engaged in intentional collisions with local fishermen in Somali waters, leading to the destruction of fishing gear, injuries and even deaths of local subsistence fishers. According to a 2005 FAO estimate, approximately 700 foreign-flagged trawlers were engaged in illegal, unreported and unregulated fishing in and around Somali waters.[42] However, in the absence of monitoring and sanctions mechanisms, these accounts remain unverified. The socio-economic and ecological damage caused by the alleged illegal exploitation of Somalia's marine resources over the past two decades could be considerable. By some estimates, 50 per cent of annual overall catch in the western Indian Ocean is fished illegally,[43] a figure potentially higher in the largely unmonitored waters off Somalia.

41. Guidance promulgated by IMO advises governments to ensure that fishing vessels entitled to fly their flag do not engage in fishing activities within 200 miles off the coast of Somalia and calls upon Member States operating naval forces in the area to identify publicly any fishing vessels found to be doing so.

42. Somalia is one of the 18 signatory States to the Djibouti Code of Conduct,[44] the IMO-led counter-piracy initiative for the Gulf of Aden and western Indian Ocean. As part of the Djibouti Code implementation programme, IMO is planning to assist Somalia in developing its maritime law enforcement capabilities and, ultimately, to develop its ability to perform a range of coast guard functions, including protection of fisheries.

43. There are reports that local warlords and officials from various Somali entities have sold false fishing licences to foreign-flagged vessels. Somalis also report observing foreign trawlers fishing in Somalia's coastal waters. It is not clear whether

[39] Available from http://www.seaaroundus.org/project.htm.

[40] Broad guidance is contained in the Code of Conduct for Responsible Fisheries, article 7, fisheries management, FAO (Rome, 1995).

[41] Fishery governance has international, national and local dimensions. It includes legally binding rules, such as national policies and legislation or international treaties, as well as customary social arrangements. It is multiscale, covering long-term strategic planning and short-term operational management and local fisheries as well as whole ecosystems.

[42] Available from http://www.fao.org/fi/oldsite/FCP/en/SOM/profile.htm.

[43] Agnew, DJ, and others, "Extent of Illegal Fishing", op. cit.

[44] See IMO, document C 102/14, annex, attachment 1.

some cases of foreign commercial fishing have been authorized and whether the issuing Somali entities have the authority to grant this permission.

44. It was widely reported that the surge of piracy since 2004 led to decreased illegal fishing off the Somali coast. Today, some observers claim that the international naval presence to suppress piracy, authorized by the Security Council, has in fact inadvertently facilitated a resurgence of illegal fishing in Somali waters.[45] Due to a lack of a formal monitoring, these claims cannot be verified.

45. My former Special Adviser on Legal Issues Related to Piracy off the Coast of Somalia, Jack Lang, emphasized in his report that part of the counter-piracy response of States and regional organizations should be to support sustainable economic growth in Somalia. This includes efforts to develop Somalia's fisheries and port activities, which would help expand economic opportunities in the country and contribute to the eradication of piracy (see S/2011/30, annex).

IV. Allegations of illegal dumping, including toxic waste

46. In the past few decades, multiple cases of illegal dumping have been documented in Africa.[46] In the 1980s, a lucrative international trade in hazardous wastes had developed, with industrialized countries exporting hazardous wastes to developing countries. These materials were sent to countries in need of hard currency, but often with limited knowledge of the hazardous nature of the waste or the capacity to dispose of the waste safely. Dumping can have devastating consequences on public health and on ecosystems and natural resources, and it has the potential to jeopardize peoples' livelihoods. As a response, the international community has established a number of environmental agreements and protocols to restrict and manage the practice.

47. Allegations of the illegal dumping of various types of waste, including radioactive, hazardous and medical, on land and in Somali waters, have been made for almost 20 years. Circumstantial evidence indicates that the dumping of illegal waste occurred during the 1990s, but verification has not been possible due to the security situation in Somalia. Further investigations are needed to ascertain the validity of both historic and more recent claims. Information about illegal hazardous

[45] The Counter-Piracy Programme of the United Nations Office of Drugs and Crime arranges frequent visits to Somalia, including Puntland. Local fishermen report fear of going "beyond the horizon", claiming that the bodies of their peers have washed ashore with bullet holes to the head, purportedly inflicted by foreign-flagged vessels engaging in illegal, unreported and unregulated fishing. These reports remain unverified.

[46] The two most prominent examples occurred in Nigeria and Côte d'Ivoire. In 1987, five ships transported 18,000 barrels of hazardous waste (including polychlorinated biphenyls) from Italy to the small town of Koko, in Nigeria, in exchange for $100 monthly rent, paid to a Nigerian farmer for the use of his land. More recently, in August 2006, toxic waste was transported to the port of Abidjan by a ship registered in Panama, the *Probo Koala*, chartered by the Swiss oil and commodity shipping company, Trafigura Beheer BV. The substance was then dumped by a local contractor in up to 12 sites around the city of Abidjan. UNEP provided immediate environmental emergency assistance to the Government of Côte d'Ivoire by deploying several environmental experts on the United Nations Disaster Assessment and Coordination team. After the emergency was over, UNEP provided technical assistance, training and equipment to prevent such a situation from happening again.

waste dumping off the coast of Somalia is unconfirmed,[47] but stems from reputable sources and related data.[48,49] Whether these allegations or practices have direct links to piracy, as some convicted pirates claim,[50] remains in question.

48. There are persistent, albeit unverified, reports of illegal incursions by foreign-flagged vessels since the collapse of the central State in 1991 until the present.[51] These include several unconfirmed reports of waste shipments via sea from Europe. INTERPOL and other agencies have published a number of reports on illegal shipments of waste globally, and over the past two years, INTERPOL has received reports of illegal, unreported and unregulated fishing and illegal waste dumping off the coast of Somalia.[52,53] However, to date, INTERPOL has not been in a position to investigate and confirm these reports.

A. Summary of assessments and reports

49. Reports from different national and international sources contributed to efforts to assess the various allegations. However given the security situation in Somalia, such assessments have had limited field access. Therefore, to date, there is no

[47] The route, destination and possible disposition of waste remain unverified and uncertain. The North Atlantic Treaty Organization (NATO) has one ongoing operation in the Gulf of Aden and related seas, Operation Allied Protector, related to piracy in the region. The operation is being conducted by five ships that are part of the Standing NATO Maritime Group 1. Informal information given to INTERPOL suggests that information may be available from the naval force present off the coast of Somalia that vessels suspected of illegal activity, either in fishing or the dumping or transport of waste, may have been intercepted and boarded as part of intergovernmental marine security operations in the region. There are also unverified informal reports that this operation may have revealed circumstantial evidence of letters from tribal chiefs or warlords approving or sanctioning illegal fisheries. However, a much more extensive investigation is required to verify or reject these allegations, and it remains unclear to what degree this also includes dumping of waste.

[48] For comparison, in the framework of its Global E-Waste Crime Group, INTERPOL notes that 36 per cent of the total of 8.6 million tons of electronic waste generated in the countries of the European Union in 2010 was collected and treated. The other 64 per cent, or 5.5 million tons, disappeared into complementary streams. One such complementary stream is the illegal export of such waste to countries that are not members of the Organization for Economic Cooperation and Development. There remains, however, much uncertainty about the final destination and handling of the complementary streams, and the focus of science and law enforcement has so far been on illegal dumping and handling on land.

[49] Huisman, J., Luepschen, C. and Wang, F., Waste of Electronic and Electrical Equipment recast: How to avoid another "paper" collection target? Paper presented at the tenth International Electronics Recycling Congress, held in Salzburg, Austria, in January 2011.

[50] Interviews with convicted senior pirates.

[51] Case studies have been presented by the following, among others: Percy, S. and Shortland, A., "The Business of Piracy in Somalia" (Berlin, German Institute for Economic Research, 2010); Hughes, J., "The Piracy-Illegal Fishing Nexus in the Western Indian Ocean" (West Perth, Australia, Future Directions International, 2011); Marchal, R., "Somali Piracy: The Local Contexts of an International Obsession", in *Humanity: an academic Journal on human rights, humanitarianism and development*, vol. 2, issue 1 (University of Pennsylvania Press, 2011). Available from http://humanityjournal.org/humanity-volume-2-issue-1/somali-piracy-local-contexts-international-obsession.

[52] INTERPOL, *The Waste Transport Checks Manual* — AUGIAS (Lyon, 2008).

[53] INTERPOL, *Electronic waste and organized crime — assessing the links* (Lyon, 2009).

comprehensive study with supporting evidence to corroborate the allegations of illegal dumping, as described further below.

50. In 1992, in response to a request from the authorities of Somaliland, the (interim) Secretariat of the Basel Convention and UNEP undertook a fact-finding mission to investigate reports of contracts and letters of intent signed for the establishment of hazardous waste treatment and storage facilities in Somalia. The mission concluded that the letters of intent and the contracts may have been signed, but found no evidence of their execution. Based on a limited number of field samples and stakeholder interviews, the mission found no conclusive evidence of the transfer, treatment or storage of hazardous waste.

51. In December 1992, a second fact-finding mission was undertaken by the (interim) Secretariat of the Basel Convention and UNEP, following the request of the Somaliland authorities for assistance with regard to "poison waste matter". The second mission concluded that a container alleged to be holding hazardous waste that had been found by local people was in fact a marine mark buoy that had been brought to shore by ocean currents and tides. The buoy had no electrical equipment or any hazardous features that would pose health risks. A second object, which could not be accessed due to security reasons, was described to be identical to the one seen by the second mission, leading to the same conclusion as to its risk.

52. In 1997, the joint UNEP/Office for the Coordination of Humanitarian Affairs Environment Unit and the United Nations Coordination Unit for Somalia undertook an assessment mission based on reports that marine pollution in Somali coastal waters was being caused by maritime traffic in the Indian Ocean. The mission found traces of oil pollution along part of the coastline in the form of tar balls, which were frequently found on beaches, with estimates of 25-30 mg per square metre. This was believed to be caused by Indian Ocean maritime traffic, in particular tankers sailing to and from oil ports in the Gulf of Aden. The report noted that marine vessels normally dispose of waste at ports, but since Somali ports lack both security and services, ships dispose of their waste offshore while at sea, with annual discharges estimated at 33,000 tons. The mission also investigated a tank container in the beach between the Ige and Mareeg fishing villages, with community members in that area reporting health-related problems. Similar containers were reported at sea in the same area, as well as around the Mogadishu and Adale beaches. In its report on the assessment mission, the team stated that it was not able to identify the contents of the container and was unable to investigate the other sightings owing to security concerns that limited field access.[54]

53. In 1998, IMO led a multiagency mission to Somalia to outline a support programme to protect and develop Somalia's marine environment, its seaports and coastal areas. The mission did not find evidence of toxic waste dumping. It concluded that the lack of a functional central authority to implement marine management or control fishing operations may have led to the overexploitation of some living marine resources in Somali waters. It noted that the licensing of tuna vessels fishing in the 24 to 200 nautical mile zone off the eastern Somalia coast had been undertaken by a company based in London, and that a number of de facto "authorities" along the coast had obtained revenues from this operation. The report said that an updated estimate of the state of Somalia's fisheries, including their

[54] Available from http://ochaonline.un.org/OchaLinkClick.aspx?link=ocha&docId=1109388.

abundance and state of exploitation, was needed before proposals for their management could be developed.

54. Following the tsunami in December 2004, UNEP responded to an urgent request from the Puntland Ministry of Fisheries, Ports and Marine Transport to assess potential environmental damage. In February 2005, UNEP released a report outlining the environmental risks caused by the tsunami based on a combination of limited field surveys and secondary sources of information.[55] Based on the findings of the UNEP report, an inter-agency technical fact-finding mission, which included UNEP, UNDP, WHO and FAO, was fielded to Puntland in March 2005. It investigated three sample sites along a 500 km coastal stretch between the three main populated coastal locations of Xaafuun, Bandarbeyla and Eyl where toxic waste had reportedly been uncovered by the tsunami. The mission focused exclusively on areas in "Puntland" that were potentially impacted by the tsunami, as it lacked access to any sites around Mogadishu owing to security concerns. Though no evidence of toxic waste was found by the mission, the team cited the urgent need for a more comprehensive assessment of alleged dumping of illegal toxic waste in Somalia both on land and at sea.[56]

55. In June 2010, Greenpeace claimed to have proof of the dumping of toxic waste in Somalia by European and American companies in the period from 1990 to 1997. In its report, Greenpeace cited the following sources: testimony from an Italian parliamentary commission; documentation from 1996 purportedly authorizing a waste treatment facility; evidence uncovered by an Italian prosecutor, including wiretapped conversations with alleged offenders; and warnings by the Special Representative of the Secretary-General for Somalia in 2008 of possible illegal fishing and illegal dumping in Somalia. The report included photos dated 1997 of an alleged dumping site, and estimated that thousands of barrels constituting millions of tons of toxic waste had allegedly been moved to Somalia in the 1990s.[57] While INTERPOL and some of the entities cited in that report have uncovered fractured evidence and signs of the dumping of toxins, no international investigation has ever been able to verify the dumping of illegal waste in Somalia. Access to alleged dump sites remains limited. Robust investigations would be required as the security situation improves.

B. International frameworks for chemical and waste management

56. The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal[58] entered into force on 5 May 1992, with the aim "to protect, by strict control, human health and the environment against the adverse effects resulting from the generation and management of hazardous wastes and other wastes". The mechanisms put in place to achieve the goals of the Convention involve the regulation of transboundary movement of hazardous wastes and other wastes through the prior informed consent procedures and the requirement

[55] UNEP, *After the Tsunami: Rapid Environmental Assessment* (Nairobi, 2005). Available from http://www.unep.org/tsunami/tsunami_rpt.asp.

[56] UNDP/UNEP/FAO/WHO, report of the United Nations Mission to Puntland to investigate toxic waste in the coastal areas of Somalia (Nairobi, 2005).

[57] Available from http://www.greenpeace.org/italy/Global/italy/report/2010/inquinamento/Report-The-toxic-ship.pdf.

[58] Available from http://archive.basel.int/text/documents.html.

that the management of those wastes be environmentally sound. A transboundary movement of hazardous wastes between parties to the Basel Convention can take place only upon prior written notification by the State of export to the competent authorities of the State of import or transit, and each shipment must be accompanied by a movement document. Under the Basel Convention, trade in hazardous waste is prohibited between parties and non-parties to the Convention. Somalia ratified the Convention in July 2010.

57. The 1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter of 29 December 1972[59] (London Convention) lays down a comprehensive approach to protecting marine environments from dumping activities. The Protocol makes the precautionary approach a general obligation, requiring signatories to "protect and preserve the marine environment from all sources of pollution" and "to prevent, reduce and where practicable eliminate pollution caused by dumping or incineration at sea of wastes or other matter". Somalia is not a party to this Protocol.

58. The Stockholm Convention on Persistent Organic Pollutants and the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade also include elements to manage the transboundary movement or trade of chemicals and/or hazardous wastes. Somalia ratified both Conventions on 26 July 2010.

59. The Bamako Convention on the Ban of the Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes within Africa[60] (Bamako Convention) is a treaty among African nations banning the importation of hazardous and radioactive waste. It also seeks to minimize and control transboundary movements of hazardous wastes within the African continent, prohibits all ocean and inland water dumping or incineration of hazardous wastes, requires that disposal of wastes be conducted in an environmentally sound manner and reaffirms the precautionary principle. The Bamako Convention arose from the failure of the Basel Convention to prevent the transit of toxic waste to less developed countries. It seeks to strengthen many of the provisions set forth as well as to close loopholes in the Basel Convention. The Bamako Convention entered into force in 1998; Somalia signed in 1991 but has yet to ratify it.

60. The Nairobi Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region[61] (Nairobi Convention) offers a regional legal framework and coordinates the efforts of the 10 contracting parties, including Somalia. The Convention is designed to promote environmentally sound and sustainable development as well as the sustainable management of marine and coastal systems in the region. This includes the provision of legislative guidance, the prevention and monitoring of pollution, and the provision of assistance in the form of maritime emergency response. The Nairobi Convention came into force in 1996 and was amended and adopted in April 2010. Somalia is a contracting party to the Convention.

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[59] Available from http://www.admiraltylawguide.com/conven/protodumping1996.html.

[60] Available from http://www.cetim.ch/en/documents/conv-bamako-ang.pdf.

[61] Available from http://www.unep.org/NairobiConvention/The_Convention/Nairobi_Convention_Text/index.asp.

C. Somali framework and national context

61. Although Somalia has signed a number of applicable international and regional agreements, the Government and regional administrations lack implementation and enforcement capacity. The challenges are enormous: political instability; inadequate baseline data; absence of research and monitoring capabilities; weak technical capacity; and lack of funding. Somalia's lack of monitoring and law enforcement capabilities makes it vulnerable to criminal activities, including the illegal dumping of toxic waste.

62. The Kampala Process, an intra-Somali forum for the exchange of information on counter-piracy and policy development, facilitated by the United Nations Political Office for Somalia (UNPOS), in partnership with IMO and the United Nations Office on Drugs and Crime, has been an effective mechanism to enhance information sharing on measures to combat piracy in Somalia. The mechanism was also used by UNPOS as a platform to discuss the present report with Somali interlocutors.

V. Observations

63. The overall evidence of illegal fishing and dumping of toxic waste remains to be fully examined. Prevailing security and resource constraints have limited a thorough examination of the evidence. In recent years, piracy off the coast of Somalia has spread across large parts of the western Indian Ocean, far beyond Somali fishing waters.[62] Piracy and armed robbery at sea off the coast of Somalia appear to have strong links to organized crime, employing increased levels of violence and using transnational financing channels.[63] More robust investigations need to be carried out by the Transitional Federal Government in collaboration with INTERPOL, EUROPOL and other crime-fighting agencies.

64. In addition to investigating past violations, it would be prudent to focus on protecting Somalia's natural resources and preventing their illegal exploitation. If Somalia's natural resource base continues to decline, it would pose a further challenge to political stability as well as much needed development initiatives.

65. The recently agreed transitional road map contains important measures that would help to address potential illegal, unreported and unregulated fishing. I call on the Transitional Federal Government, working in tandem with the Transitional Federal Parliament, to declare an exclusive economic zone off the Somali coast in accordance with the United Nations Convention on the Law of the Sea, and as agreed in the road map. Such a proclamation, together with the adoption of enabling legislation, would clarify the legal basis for the protection of the sovereign rights of Somalia with respect to natural resources and its jurisdiction over the marine environment.

66. The United Nations, together with the African Union and the African Union Mission in Somalia, is working hard to support the Government of Somalia to reform its security sector and build up an adequate police force. Discussions are

[62] According to the Indian Ocean Tuna Commission, between 2008 and 2009, of all reports of piracy off the coast of Somalia, only 13 attacks and four successful hijackings were carried out against fishing vessels.

[63] Interviews of convicted pirates carried out by the United Nations Office on Drugs and Crime.

ongoing on identifying appropriate coastguard functions. The limited capacity of the Transitional Federal Government to implement the international agreements on resource management and environmental protection needs to be expanded.

67. Until such time as Somalia develops a coastal monitoring capacity, the mandates of the international naval efforts to counter piracy off the coast of Somalia could be expanded to include monitoring and deterrence of illegal fishing and the illegal dumping of waste. This could be done in conjunction with the Transitional Federal Government and regional authorities.

68. It is equally important to address the conditions that enable illegal charcoal trading, which has put livelihoods at risk through the depletion of the primary forest cover in southern Somalia, thus exacerbating the humanitarian crisis. Given that trading in charcoal from the southern and central areas of Somalia, which are currently controlled by Al-Shabaab, could be interpreted as violating the Somalia sanctions regime, the Sanctions Committee pursuant to resolutions 751 (1992) and 1907 (2009) may consider explicitly banning the export of charcoal via Kismaayo and other ports controlled by Al-Shabaab.

69. The Transitional Federal Government needs to take steps to enhance maritime security. Efforts to encourage the development of alternative livelihoods in the maritime environments could also lead to improved maritime security. It should consider acceding to the various conventions under the purview of IMO, including the International Convention for the Safety of Life at Sea, the International Convention for the Prevention of Pollution From Ships and the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (London Convention) and its 1996 Protocol.

70. Regional cooperation on the management of transboundary fish species and on ecosystem management will help Somalia develop its fisheries sector and ensure the sustainable utilization of its resources. I encourage Somalia to fully participate and engage in the Indian Ocean Tuna Commission and in other regional fisheries bodies, such as the Southwest Indian Ocean Fisheries Commission, of which it is a member.

71. As a number of earlier assessments have shown, Somalia needs the appropriate legal frameworks to address all aspects of maritime law enforcement within its waters, taking into account relevant security and economic capacity concerns. Similarly, a legal framework is necessary to enable the development of a viable, legitimate and sustainable Somali fishing industry, with appropriate structures for issuing licences, as well as collecting and allocating revenues. The authorities should develop quick-impact employment initiatives in the sector and support the long-term recovery of Somalia's fishing industry and its natural resources.

72. The United Nations would assist the Transitional Federal Government and regional authorities, as requested, in creating and establishing marine protected areas as well as helping devise related conservation and management measures. Member States need to strengthen efforts to prevent illegal, unreported and unregulated fishing. In this regard, it would be particularly helpful to encourage the entry into force of the Port State Measures Agreement and strengthen the national fishing vessel registries.

73. Given the strategic importance of Somalia's natural resource base for its development efforts, I intend to recommend a strategic environmental assessment

for Somalia to be carried out by the United Nations, together with the relevant organizations, in partnership with the Transitional Federal Government.

74. I urge Member States to heed the call of the Security Council to investigate allegations of illegal fishing and illegal dumping, including of toxic substances, with a view to prosecuting such offences when committed by persons or entities under their jurisdiction. I intend to include updates on these issues in my future reports relating to piracy off the coast of Somalia.

75. The challenges to Somalia's natural resources will have to be addressed simultaneously at the local, regional and national levels. The Transitional Federal Government, together with the Transitional Federal Parliament, will need to work collaboratively with the regional authorities of Puntland, Somaliland and Galmudug to meet these challenges and take action on the above observations. I urge all Somalis to fully utilize the Kampala Process dialogue forum for such collaboration. My Special Representative for Somalia is prepared to support such a dialogue.